

## A NEW MYXOMYCETE FOR NEW SOUTH WALES.

BY D. McALPINE.

*(Communicated by J. H. Maiden.)*

On the 2nd of February Mr. J. H. Maiden, Director of the Botanic Gardens, sent me a micro-fungus from a lawn in front of his house which was common on Buffalo-grass (*Stenotaphrum americanum*, Schrank) and Couch-grass (*Cynodon dactylon*, L. C. Rich.); also on *Kyllingia monocephala*, Rottb., a cyperaceous plant. It has since been found on a lawn in the Garden Palace Grounds, but has not been observed in any other localities up to the present. It belongs to the group of Slime-fungi or Myxomycetes and is a novelty for New South Wales, although already recorded for West Australia and Victoria. It is *Physarum cinereum*, Pers., and is commonly found on dead leaves, bark, wood, &c. The grass sent was pretty well covered with very minute roundish or hemispherical cinereous sporangia, which were crowded together, and the wall readily showed the presence of lime on the application of an acid. Many of them were burst and the spores were of a pale violet colour, spherical, smooth, and averaging 10-11  $\mu$  in diameter.

As the spores varied somewhat in colour from the description given in Lister's recent "Monograph of the Mycetozoa," I sent specimens to that gentleman, and he has just kindly replied as follows:—"With regard to the colour of the spores of *P. cinereum*, I admit that 'bright violet-brown' is strong, but it is not pure violet, I think, and at the time I published the Monograph (1894) I had not separated *P. vernum*, which has, as a rule, browner spores. Pale violet-grey might better express the typical colour of *P. cinereum* spores, but it is difficult to express colour in words. I have given 'violet-brown' for the colour of *P. nutans*; there is

generally a brownish tinge in these also and they are very similar to those of *P. cinereum*."

This question of the colour of the spores is an important one in fungi, because there are some large families such as the *Agaricaceæ* in which the primary divisions are based upon the colour of the spores, and there are some leading systematists who wish to extend this principle to the various divisions of fungi. The difficulty lies in the fact that there is often a combination of colours to which it is almost impossible to give a common name, and in this particular instance there is undoubtedly a brownish tinge associated with the violet, so that one has to select the prevailing tint. In the *Agaricaceæ* already referred to, some authors make one section for black spores (*Melanosporæ*) and another for purple-black spores (*Porphyrosporæ*), but I have never yet seen any spores of the former in which there was not a violet tinge, so that too minute distinctions of colour may defeat the very object in view.

The group of *Myxomycetes* has not yet been much attended to in New South Wales, although it is a very interesting and peculiar one. It is claimed both by botanists and zoologists, because in its reproductive stages it produces distinct spores in a powdery mass, which shows its affinity with fungi, but these spores, instead of producing a mycelium, give rise to swarm-cells, which coalesce to form a plasmodium. So those who pay most attention to the reproductive phase, call this group *Myxomycetes*, while those who consider that the formation of a plasmodium indicates a wide separation from the fungi and links it on to the animal world, speak of it as *Mycetozoa*. About 550 species are known altogether, and of these 52 are recorded for Australia and only 6 for New South Wales. They are here given, with their distribution in other colonies, and named according to Lister's Monograph:—

1. *Arcyria Erstedtii*, Rost.—New South Wales only. On leaves of *Atherospermum*, Mount Wilson (Hamilton, 1888).

Lister remarks in his Monograph under the heading of this species: "The type specimen of *Hemiarcyria fuliginea*, Cooke

and Mass., from N.S.W., has the capillitium attached to persistent papillose plates of the sporangium-wall, and is similar to the Lyme Regis gatherings of *A. Ærstedtii*, except in the colour, which is now fuliginous-brown."

2. *Badhamia utricularis*, Berk., (*B. varia*, Mass., in part)—  
Tasmania and Victoria. On wood, &c.
3. *Physarum cinereum*, Pers.—West Australia and Victoria.  
On Sydney lawns (Maiden, Feb., 1898).
4. *Plasmodiophora brassicæ*, Woron. Victoria and S. Aus-  
tralia. On roots of Crucifers, causing the disease known  
as "Club-root" or "Fingers and Toes."
5. *Spumaria alba*, DC.—Victoria and Queensland. On grass.
6. *Stemonitis fusca*, Roth.—Victoria, Queensland, Tasmania  
and West Australia. On dead wood (Maiden, July, 1895).

It will be seen from the above that Mr. Maiden has brought to light no less than two out of the six known New South Wales Myxomycetes, and as he is rapidly enlarging our knowledge of the fungi as well as other botanical products of New South Wales, I have no doubt but this group will soon be abreast of its position in the other colonies.